

# UNCLASSIFIED

AD NUMBER
AD803228
NEW LIMITATION CHANGE
TO Approved for public release, distribution unlimited
FROM Distribution authorized to U.S. Gov't. agencies and their contractors; Administrative/Operational Use; OCT 1966. Other requests shall be referred to Department of the Army, Fort Detrick, MD.
AUTHORITY
BDRL D/A ltr, 28 Sep 1971

THIS PAGE IS UNCLASSIFIED

803228

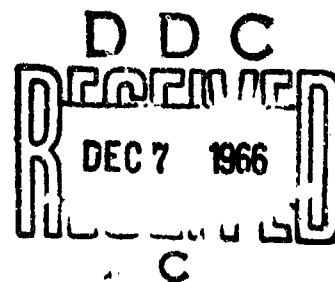
AD

TECHNICAL MANUSCRIPT 317

USE OF THE MICROSCOPE IN A CLASS III  
SAFETY CABINET SYSTEM

James T. Sinski

OCTOBER 1966



DEPARTMENT OF THE ARMY  
Fort Detrick  
Frederick, Maryland

Reproduction of this publication in whole or in part is prohibited except with permission of the Commanding Officer, Fort Detrick, ATTN: Technical Releases Branch, Technical Information Division, Fort Detrick, Frederick, Maryland, 21701. However, DDC is authorized to reproduce the publication for United States Government purposes.

#### DDC AVAILABILITY NOTICES

Qualified requesters may obtain copies of this publication from DDC.

Foreign announcement and dissemination of this publication by DDC is not authorized.

Release or announcement to the public is not authorized.

#### DISPOSITION INSTRUCTIONS

Destroy this publication when it is no longer needed. Do not return it to the originator.

The findings in this publication are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

DEPARTMENT OF THE ARMY  
Fort Detrick  
Frederick, Maryland 21701

TECHNICAL MANUSCRIPT 317

USE OF THE MICROSCOPE IN A CLASS III SAFETY CABINET SYSTEM

James T. Sinski

Special Operations Division  
COMMODITY DEVELOPMENT AND ENGINEERING LABORATORY

Project 1C522301A059

October 1966

## USE OF THE MICROSCOPE IN A CLASS III SAFETY CABINET SYSTEM

### ABSTRACT

For facile use of the microscope in the Class III gas-tight safety cabinet system, the combination of tubular extensions from the plastic window and a microscope with a movable stage for focusing is described.

This report describes a modification and the equipment necessary for the facile use of the microscope in the Class III or "gastight" safety cabinet system.\* Most microscopes bring the image into focus by movement of the body tube. With a stationary viewing point, such as a plastic pane of the window of the Class III system, the ocular moves toward or away from this viewing point as the microscope is focused. For efficient use, the entire microscope must be positioned many times with a lab-jack to keep the ocular adjacent to the viewing point.

Microscopes are now available with fixed oculars. These models are designed so that the stage is the movable portion of the instrument used for focusing.

To allow the observer and operator to look through the eye pieces of the microscope with ease when the microscope is within a gastight system, extensions have been made from the plastic window of the cabinet system. For the use of a binocular microscope, two such extensions have been made with a distance of 2.5 inches from center to center of the viewing ports. The distance between these extensions has been adequate for the differing interpupillary distances of those persons who have used this particular system. The aluminum extensions have been inserted into the window so that they are parallel to the length of the oculars of the body tube. The arrangement makes the ocular lens of the microscope parallel to the cast optic plastic viewing port of the extension (Fig. 1). This extension viewing system is inserted in the plastic window approximately 5 inches from the base of the window. The assembly is subjected to the standard Class III safety cabinet gas tightness leak test.

---

\* Wedum, A.G. 1964. Laboratory safety in research with infectious aerosols. Public Health Rep. 79:619-633.

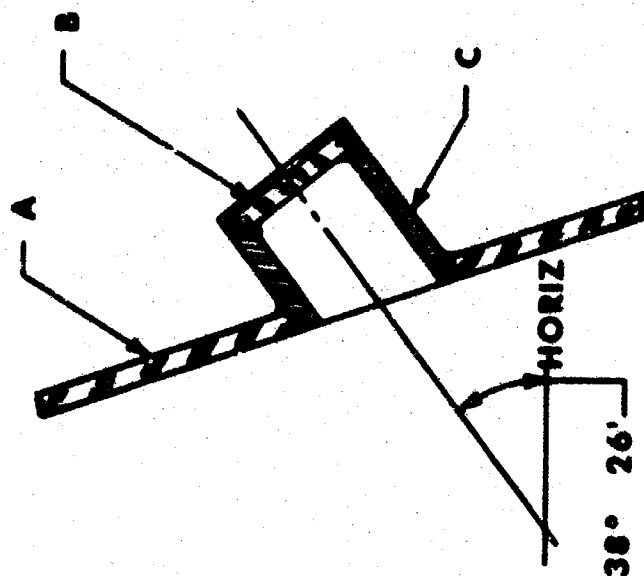
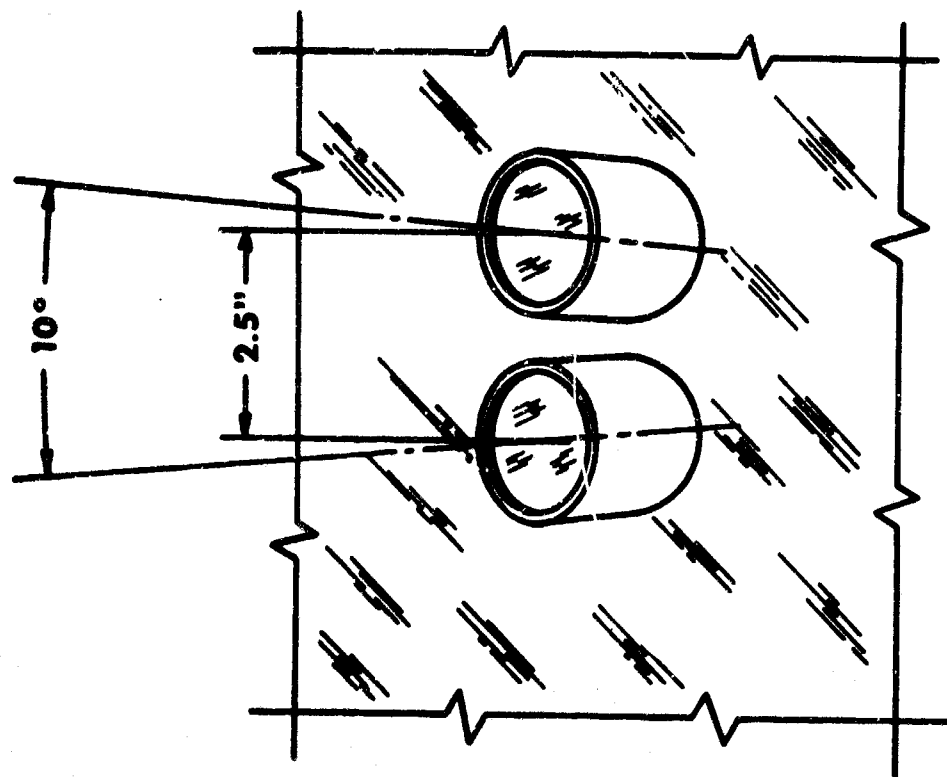


Figure 1. Tubular Extension Assembly for Use of Binocular Microscope in Gastight Cabinet System.  
 (A) Safety cabinet viewing window; (B) cast optic plastic  $\frac{1}{8}$  inch thick; (C) aluminum tubing (2-inch outside diameter x  $\frac{1}{4}$ -inch inside diameter x 2 inches long). Items A and B are fastened to item C with epoxy cement.

The microscope is placed in position with the oculars inserted into the aluminum extensions from the window and raised with a lab-jack. Once the microscope is in position, it need not be moved. Since the microscope is focused by a movable stage, the oculars do not move from the original position (Fig. 2).

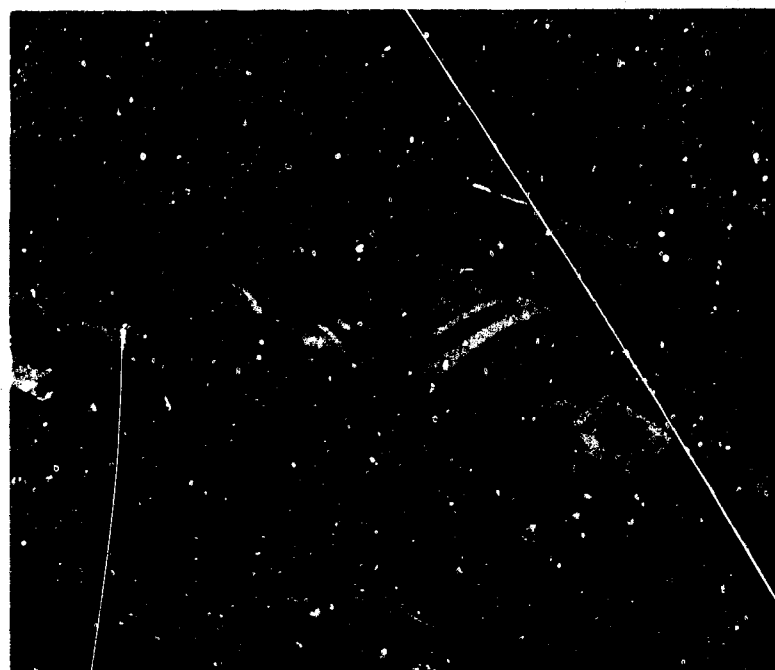


Figure 2. Microscope with Oculars in Tubular Extensions from Plastic Pane of Safety Cabinet System.

At present, wide-field oculars are used in this microscope.

The tubular extension for use with the monocular microscope is inserted into the plastic pane at a 40-degree angle from the horizontal and is perpendicular to the window rather than canted as shown in Figure 1.

Thus, this system of tubular extensions from the viewing window of the Class III system plus the use of a microscope with a movable stage for focusing provides a method for efficient use of a binocular or monocular microscope with low, high, and oil-immersion objectives.

Not all the problems have been solved with this system. One of these problems is the inability to get good clear photographs through the microscope.



Unclassified  
Security Classification

DOCUMENT CONTROL DATA - R&D		
(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)		
1. ORIGINATING ACTIVITY (Corporate author) Department of the Army Fort Detrick, Frederick, Maryland 21701		2a. REPORT SECURITY CLASSIFICATION Unclassified 2b. GROUP
3. REPORT TITLE USE OF THE MICROSCOPE IN A CLASS III SAFETY CABINET SYSTEM		
4. DESCRIPTIVE NOTES (Type of report and inclusive dates)		
5. AUTHOR(S) (Last name, first name, initial) Sinski, James T.		
6. REPORT DATE October 1966	7a. TOTAL NO. OF PAGES 8	7b. NO. OF REFS 1
8a. CONTRACT OR GRANT NO. A. PROJECT NO. IC522301A059	8b. ORIGINATOR'S REPORT NUMBER(S) Technical Manuscript 317 8c. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
10. AVAILABILITY/LIMITATION NOTICES Qualified requesters may obtain copies of this publication from DDC. Foreign announcement and dissemination of this publication by DDC is not authorized. Release or announcement to the public is not authorized.		
11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY Department of the Army Fort Detrick, Frederick, Maryland 21701	
13. ABSTRACT For facile use of the microscope in the Class III gastight safety cabinet system, the combination of tubular extensions from the plastic window and a microscope with a movable stage for focusing is described.		
14. Key Words *Microscopes *Safety cabinets		

DD FORM 1473

Unclassified  
Security Classification